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ABSTRACT

This scrapbook resulted from a search for possible consensus on the outcomes of undergraduate education. The scrapbook contains quotations from various sources related to undergraduate education and serves as a resource that reviews some of the literature. It begins with later 20th century expectations of corporate and governmental bodies in Europe and the United States. Next are lists of expectations from academic individuals and institutions, mostly from the last century. A review of the lists of currently expected literacies makes it apparent that instrumental skills dominate. To illustrate the contrast between today's interest in instrumental skills and earlier contemplative and humanistic goals, a few of the premodern views and perspectives are included. (Author/SLD)

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SCRAPBOOK OF UNDERGRADUATE LITERACIES

John Harris

August 2002

This scrapbook resulted from a search for possible consenses on the outcomes of undergraduate education. It begins with late 20th Century expectations of corporate and governmental bodies in Europe and the U.S. Next are lists of expectations from academic institutions and individuals, mostly from the last century. In reviewing the lists of currently expected literacies, it quickly becomes apparent that instrumental skills dominant. To illustrate the contrast between today's interest in instrumental skills and earlier contemplative and humanistic goals, a few of the pre-modern views and perspectives are included.

Hopefully, the scrapbook will assist the Pew Forum on Undergraduate Learning as it attempts to chart a course for improved undergraduate learning in the U.S.

Corrections and suggestions for improvement will be most appreciated. Please send them to:

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Current International Literacy Expectations

The following lists illustrate the international interest in practical, instrumental outcomes.

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UNESCO's Abilities for the 21st Century World Citizen

Under Article 9 - Innovative educational approaches: critical thinking and creativity, the World Conference on Higher Education set out an agenda for higher education around the world. First, it described the abilities and inclinations that the 21st century world citizen should possess.

- Thinks critically
- Analyzes problems of society
- Looks for solutions to the problems of society
- Applies those solutions
- Accepts social responsibilities

To support these abilities and inclinations, it advocated curricula and pedagogies that "go beyond cognitive mastery of disciplines" to develop "skills, competences and abilities" in –

- Communication
- Creative and critical analysis
- Independent thinking
- Team work in multicultural contexts
- Creativity that combines traditional or local knowledge and know-how with advanced science and technology

Such curricula and pedagogies should be reinforced by examination techniques that assess "not only powers of memory but also powers of comprehension, skills for practical work and creativity."

> *World Declaration on Higher Education for the Twenty-first Century: Vision and Action* adopted by the World Conference on Higher Education, 9 October 1998, http://www.unesco.org/education/wche/declaration.shtml

European Union Emphasis on Utilitarian Skills

Hesketh cites the European Commission's Memorandum on Higher Education in the European Community November 5, 1991, as indicating a deep concern about instrumental skills.

> It is taken as axiomatic across Europe that there is a 'widespread lack of important generic skills and social skills such as ... problem-solving skills, learning efficiency, flexibility and communication skills ... in addition to shortages of critical scientific and technological skills'. 252

Based on a survey of 893 European employers who hired graduates in December 1997 to which 372 responded (42% response rate), European employers ranked the competencies they prefer in the following ranked order:

1. Verbal Communication

2. Learning (ability to learn new materials)
3. Written Communication
4. Problem Solving
5. Teamwork
6. Self-management
7. Numeracy
8. Information Technology
9. Technical (hard technical skills) 253

Unexpected Findings

- This survey found that employers are less interested in numerical and information technology skills than the UK's Dearning Commission advocated. Based on these findings, Dearing should have put emphasis on problem-solving, teamwork, and self-management. 253

- "Employers, it seems, no longer seek graduates with the 'hard' technical or vocational skills required for the job. On the contrary, our data arguably imply that the 'softer' or interpersonal skills are the new vogue." 255

Hesketh, Anthony J. "Recruiting and Elite? Employers' perceptions of graduate education and training." *Journal of Education and Work* 13. 3, (2000): 245-271.

UK's Dearing Commission

Aims and purposes. "In the light of these national needs, we believe that the aim of higher education should be to sustain a learning society. The four main purposes which make up this aim are:

- to inspire and enable individuals to develop their capabilities to the highest potential levels throughout life, so that they grow intellectually, are well equipped for work, can contribute effectively to society and achieve personal fulfilment;
- to increase knowledge and understanding for their own sake and to foster their application to the benefit of the economy and society;
- to serve the needs of an adaptable, sustainable, knowledge-based economy at local, regional and national levels;
- to play a major role in shaping a democratic, civilised, inclusive society." p. 6

Recommendation 21
We recommend that institutions of higher education begin immediately to develop, for each programme they offer, a 'programme specification' which identifies potential stopping-off points and gives the intended outcomes of the programme in terms of:

- the knowledge and understanding that a student will be expected to have upon completion;

- key skills: communication, numeracy, the use of information technology and learning how to learn;
- cognitive skills, such as an understanding of methodologies or ability in critical analysis;
- subject specific skills, such as laboratory skills." 9-10

> "Introduction," *Report of The National Commission of Inquiry in Higher Education*, (Sir Ron Dearing (Chairman), United Kingdom, 1997. http://www.leeds.ac.uk/educol/ncihe/

European Education for Economic Advancement not for Personal Contemplation

The author recently asked Lee Harvey, a leading researcher on higher education, to comment on the currently expected outcomes of British higher education. He responded as follows:

> Having gone through the outcomes descriptors/specifications approach here in the UK (that was well underway before being formalised by the Quality Assurance Agency for Higher Education) **the current obsession is employability**. This is fuelled by a clear steer from government and was again formalised by the Dearing Committee report of 1997, although (it) had been an unspectacular feature of UK higher education prior to that. (Emphasis added)
>
> Email from Lee Harvey, Professor, University of Central England, May 31, 2002.

Hesketh reports the Higher Education Quality Council's Graduate Standards Programme final report assumed that "higher education programmes will encourage skills and qualities in addition to ensuring a sound understanding of subject matter." He also cites the studies of the Graduate Apprenticeship Framework that "provides further evidence that higher education is shifting from its role as provider of '**knowledge for contemplation**' to providing students with a set of key skills or competencies that belong to the ideology of 'operational competence'." (Emphasis added.) (Hesketh 249)

American Focus on Practical, Instrumental Skills

In this section on American practical, instrumental skills, the first part deals with the interests of the business community; the second with those of various academic sectors.

Business and Industrial Expectations

> Secretary's Commission on Achieving Necessary Skills (SCANS) U.S. Department of Labor
>
> Reading

Locates, understands and interprets written information in prose and documents—including manuals graphs and schedules—to perform tasks; learns from text by determining the main idea or essential message; identifies relevant details, facts and specifications; infers or locates the meaning of unknown or technical vocabulary; and judges the accuracy, appropriateness, style and plausibility of reports, proposals or theories of other writers.

Writing

Communicates thoughts, ideas, information and messages in writing; records information completely and accurately; composes and creates documents such as letters, directions, manuals, reports, proposals, graphs and flow charts; uses language, style, organization and format appropriate to the subject matter, purpose and audience; includes supporting documentation and attends to level of detail; and checks, edits and revises for correct information, appropriate emphasis, form, grammar, spelling and punctuation.

Arithmetic

Performs basic computations; uses basic numerical concepts such as whole numbers and percentages in practical situations; makes reasonable estimates of arithmetic results without a calculator; and uses tables, graphs, diagrams, and charts to obtain or convey quantitative information.

Mathematics

Approaches practical problems by choosing appropriately from a variety of mathematical techniques; uses quantitative data to construct logical explanations for real-world situations; expresses mathematical ideas and concepts orally and in writing; and understands the role of chance in the occurrence and prediction of events.

Listening

Receives, attends to, interprets and responds to verbal messages and other cues such as body language in ways that are appropriate to the purpose (e.g., comprehend, learn, critically evaluate, appreciate or support a speaker).

Speaking

Organizes ideas and communicates oral messages appropriate to listeners and situations; participates in conversation, discussion and group presentations; selects an appropriate medium for conveying a

message; uses verbal language and other cues such as body language appropriate in style, tone and level of complexity to the audience and occasion; speaks clearly and communicates a message; understands and responds to listener feedback; and asks questions as necessary. Uses imagination freely, combines ideas or information in new ways, makes connections between seemingly unrelated ideas, and reshapes goals in ways that reveal new possibilities.

Decision Making

Specifies goals and constraints, generates alternatives, considers risks and evaluates and chooses best alternative.

Problem Solving

Recognizes that a problem exists, identifies possible reasons for the discrepancy, devises and implements a plan of action to resolve it, evaluates and monitors progress, and revises plans as revealed by findings.

Seeing Things in the Mind's Eye

Organizes and processes symbols, pictures, graphs, objects or other information (e.g., sees a building from a blueprint, a system's operation from schematics, and the flow of work activities from narrative descriptions).

Knowing How to Learn

Recognizes and uses learning techniques to apply and adapt new knowledge and skills in both familiar and changing situations, and is aware of learning tools such as personal learning styles (e.g., visual, aural), and formal and informal learning strategies.

Reasoning

Discovers rules or principles underlying the relationship between two or more objects and applies them in solving a problem, uses logic to draw conclusions from available information, extracts rules or principles from a set of objects or written text, applies rules and principles to a need or determines which conclusions are correct when given a set of facts and a set of conclusions.

> *SCANS' mission was to define the necessary functional and enabling skills that society must provide to every child by the age of 16.*
>
> The dual challenges of competing in a world market and rapid technological advancements have necessitated redesign of the

workplace into an innovative work environment known as the high-performance workplace. This environment requires knowledge workers capable of solving problems, creating ways to improve the methods they use, and engaging effectively with their coworkers. In the 21st century, workers will need transferable core skills necessary for career success at all levels of employment and for all levels of education.... The U. S. Department of Labor's Secretary's Commission on Achieving Necessary Skills [SCANS] identified 36 necessary employability skills, including the ability to use competencies in the following areas: resources, interpersonal skills, information systems and technology. Despite earlier misconceptions about SCANS, recent studies in Nevada and Canada have been successful in validating, updating and regionalizing generic employability skills and competencies over time.

Workplace Essential Skills: Resources Related to the SCANS Competencies and Foundation Skills, U.S. Department of Labor, August 2000.

ASTD – American Society for Training and Development

1. Learning to learn
2. Reading for the new workplace
3. Writing with impact
4. Computation in a technological workplace
5. Oral communication
6. Principles of good listening
7. Resourcefulness
8. Creative thinking
9. Self-esteem
10. Motivation and goal setting
11. Career development
12. Interpersonal skills
13. Teamwork
14. Negotiation
15. Understanding organizational culture

16. Sharing leadership

Carnevale, Anthony Patrick, Gainer, Leila J., Meltzer, Ann S. *Workplace basics: the essential skills employers want,* The Jossey-Bass management series; ASTD best practices series, San Francisco: Jossey-Bass Publishers, 1991 *(Employability Skills: An Update*. ERIC Digest No. 220, ERIC Clearinghouse on Adult, Career, and Vocational Education, Columbus, OH)

CORPORATE OFFICERS

A survey of 113 officers in large American corporations in 1982, for example, asked the officers to identify the factors that "become important to success as a college graduate employee progresses to middle and top positions in your company." The traits most often singled out are, in rank order.

1. Verbal communication skills

2. Ability to identify and formulate problems

3. Willingness to assume responsibility

4. Interpersonal skills

5. Reasoning ability

6. Creativity

7. Ability to function independently.

As cited in: Useem, Michael. *Liberal Education and the Corporation*, New York: Aldine de Guyter, 1989, 92, taken from: Warren, R. G. (1983). *New Links Between General Education and Business Careers*, Washington, D.C.: Association of American Colleges.

Academic Expectations

Aims of American Liberal Education. Patterson summarizes what he sees as the American consensus on the educated person after two and one-half centuries of American liberal education.

1. "... write clear, correct, and vigorous English prose..."
2. "... use at least one foreign language ..."
3. Understand "how literature gives expression to experience

within cultural contexts and to know in some detail some of the classic literary texts."

4. Reason mathematically and quantitatively and make basic use of computers.
5. "... understand basic scientific ideas and technological applications..."
6. "... analyze with a broad historical perspective the social institutions and processes which influence our lives."
7. Know something of philosophic questions and methods, "including logic, ethics, and metaphysics" and appreciate in some degree the fine arts.
8. Acquainted "with the structure and significance of the quest for religious meaning and truth." 212-213

Patterson, W. Brown. "Defining The Educated Person: From Harvard to Harvard." *Soundings* 66.2 (Summer 1984) 192-217.

Daniel Bell. Bell's six purposes of liberal education are as follows:

1. To overcome intellectual provincialism
2. To appreciate the centrality of method (i.e. the role of conceptual innovation)
3. To gain an awareness of history
4. To show ideas related to social structures
5. To understand the way values infuse all inquiry
6. To demonstrate the civilizing role of the humanities

One must embody and exemplify general education through disciplines, and one must extend the context of specialism so that the ground of knowledge is explicit. The common bond of the two is the emphasis on **conceptual inquiry**. To this extent, in the reconciliation of liberal education and specialism, training cannot deal with techniques in the narrow sense, but the foundations of knowledge itself: i.e., how a particular discipline establishes its concepts; how these concepts, seen as fluid inquiry, need to be revised to meet new problems; how one establishes the criteria of choice for one, rather than another, alternative patterns of inquiry. In effect, general education is education in the conduct and strategy of inquiring itself. (Emphasis added.)

Bell, Daniel. *The Reforming of General Education*, Garden City, NY: Anchor Books by Doubleday & Company, Inc., 1968, 154, 159–160.

Competent College Student. College graduates should be able to

reason or think critically. Reasoning or critical thinking, as we use the term, is a combination of several talents—the utilization of them, to one degree or another, of course, varies with the problems and issues under consideration:

- An attitude of wanting evidence to support one's own assertion as well as those of others
- Ability to apply, at the least, elementary rules of logic
- Skill in using informed questions to challenge the assertions of experts and authorities
- Ability to derive properly supported conclusions from pertinent data
- Alertness to the tentative nature of knowledge manifested in couching assertions as probabilities

Reasoning ability or critical thinking cannot be judged by others or be useful to them unless it is expressed clearly and effectively either orally or in writing. In fact, quality of thought is usually demonstrated through quality of expression.

College graduates should have an informed acquaintance with the major methods of inquiry. Prominent among these is the experimental method with its emphasis on careful observation and precise measurement. Understanding these principles will help students solve immediate problems as well as appreciate the value of the general advancement of knowledge. Included, too, are several forms of analysis and quantitative techniques, which are needed for investigating the workings and development of modern society.

College graduates should have broadened perspectives. That is, they should evidence some facility in viewing their own life experiences in wider contexts. We think here of their knowing some of the important scholarly, literary and artistic achievements of the past. They should be able to distinguish some of the similarities and differences between significant current national events and those of earlier days, such as unemployment of the 1930s and unemployment now. They should evidence some worldwide perspective and be able to evaluate contrasting social and economic systems. For example, they should be able to distinguish the problem of feeding the masses in India from that of feeding the people of Mexico.

College graduates should have a penetrating knowledge of our form of government. An understanding of our legal system is critical here. As a nation, we chant, "Ours is a government of laws, not of people;" yet how many adult citizens know what due process is or the true meaning of the Fifth Amendment? Knowledge of our government would also be reflected in the ability to describe the major similarities and differences between it and one or more contemporary foreign ones.

College graduates, we believe, should exhibit a moral sensibility for both personal and institutional behaviors, which enhance or erode the fundamental human values of mutual respect, cooperation and integrity. We should aim at their acquiring judgment, which would enable them to make discriminating moral choices. For example, they should manifest concern for the future through demonstrated respect for and stewardship of our finite natural resources.

Finally, college graduates should manifest a heightened sense of personal awareness. By this, we mean knowing how to maintain a healthy mind and body, assuming responsibility for self and contributing to one's society. Such personal awareness is based on several critical areas of knowledge, such as that needed for maintenance and preservation of a healthy body. Also basic is some understanding of how human behavior is influenced as well as the ability to recognize constructive behavior in oneself and in others. No individual's physical or psychological welfare is isolated from the welfare of one's neighbor and society. Each graduate should attain a very personal realization that the struggles for the freedoms enjoyed in the United States are never ending and that participation in those struggles is a moral obligation

of each of us.

The *Competent College Student* was produced under a Ford Foundation grant by four Tennessee educators for the Tennessee Higher Education Commission in 1977: Harvie Branscomb, Chancellor Emeritus, Vanderbilt; Ohmer Milton, Professor of Psychology and Director, Learning Research Center, The University of Tennessee, Knoxville; John Richardson, Graduate Dean Emeritus, Memphis State University; and Herman Spivey, Vice Chancellor for Academic Affairs, The University of Tennessee, Knoxville.

Paul Dressel

1. The recipient of the baccalaureate degree should be qualified for some type of work. The recipient should be aware of what it is and should have confidence in the ability to perform adequately.

2. The student should know how to acquire knowledge and how to use it.

3. The student should have a high level of mastery of the skills of communication.

4. The student should be aware of her own values and value commitments, and the student should be aware that other individuals and cultures hold contrasting values that must be understood and, to some extent, accepted in interaction with them.

5. The graduate should be able to cooperate and collaborate with others in study, analysis and formulation of solutions to problems, and then act on them.

6. The college graduate should have an awareness, concern and sense of responsibility for contemporary events, issues and problems.

7. The college graduate should see her total college experience as coherent, cumulative and unified by the development of broad competencies and by the realization that these competencies are relevant to her further development as an individual and to the fulfillment of her obligations as a responsible citizen in a democratic society.

Dressel, Paul L. *College and University Curriculum*, Berkley: McCutchan Publishing Corporation, 1968, 210–212. (Dressel was a leader in the systematic study of higher education and Director of Institutional Research at Michigan State University for many years.)

The League for Innovation in the Community College. The League has 677 member institutions in the U.S. and Canada. With the support of a Pew grant, the League convened a focus group of representatives from

15 community colleges to define 21st Century Skills. This focus group identified the following eight categories of core skills:

1. Communication skills (reading, writing, speaking, listening)
2. Computation skills (understanding and applying mathematical concepts and reasoning, analyzing and using numerical data)
3. Community skills (citizenship; diversity/pluralism; local, community, global, environmental awareness)
4. Critical thinking and problem solving skills (analysis, synthesis, evaluation, decision making, creative thinking)
5. Information management skills (collecting, analyzing, and organizing information from a variety of sources)
6. Interpersonal skills (teamwork, relationship management, conflict resolution, workplace skills)
7. Personal skills (ability to understand and manage self, management of change, learning to learn, personal responsibility, aesthetic responsiveness, wellness)
8. Technology skills (computer literacy, Internet skills, retrieving and managing information via technology) 15

The League surveyed the chief academic officer of its 677 member community colleges in the U.S. and Canada about their institutions adoption and assessment of these 21st Century Skills. Thirty eight percent or 259 responded, and 230 indicated that their institution had agreed on a set of 21st Century Skills and nearly 50% of these institutions included the skills listed above. "Most colleges represented in this study include *communication (written and oral)* (91%), *critical thinking/problem solving* (88%), *technology literacy* (86%), and *mathematics* (79%) in the set of 21st Century Skills. 20

Wilson, Cynthia, et al. *Learning Outcomes for the 21st Century: Report of a Community College Study*. League for Innovation in the Community College, 1997.

The American Academy for Liberal Education

Effective Reasoning

An education in the liberal arts always seeks to develop students' abilities to recognize and to think clearly about important issues and questions. The ability to reason effectively includes certain foundational skills or abilities (e.g., fluency in reading, writing and oral communication, mastery of the basic principles of logical, mathematical and scientific reasoning) as well as higher-order capacities formulating, analyzing, integrating and applying arguments and information. Aspects of success in fostering effective reasoning that an institution should seek to document and describe might include:

- Demonstrated attainment of the necessary foundational abilities of effective reasoning—e.g., fluency in reading, writing and oral communication—and mastery of the basic principles of logical, mathematical and scientific reasoning during the first year of coursework or at the conclusion of the general education program.

- The ability to frame reasonable arguments, support them with relevant evidence and anticipate likely counter-arguments, along with the complementary ability to analyze arguments rationally, evaluate the evidence supporting them and frame reasonable and persuasive counter-arguments.

- The ability to recognize and evaluate new information, integrate that information into existing frameworks of knowledge, and adapt those frameworks as necessary or appropriate.

- The ability to identify and apply standards of intellectual rigor or precision appropriate to different kinds of subject matter.

- The ability to engage in reasoned and sustained discussions of important issue or questions. The ability to elucidate orally and in writing different or opposing perspectives evenhandedly and dispassionately.

Broad and Deep Learning

A liberally educated person should possess a rich fund of meaningful knowledge, as well as the ability to compare and integrate new and diverse areas of knowledge in fruitful ways. An institution's general education curriculum should impart a broad foundational knowledge of the various liberal arts and sciences. In most cases, students will also experience the depth of learning that comes from a sustained, progressive exploration of the distinct modes of inquiry belonging to one or more of the major disciplines. Through such studies or their equivalents, students acquire the ability to relate disparate areas of the arts and sciences to one another, as well as to integrate knowledge gained across different fields of study. Aspects of success in fostering breadth and depth of student learning that institutions would seek to document and describe might include:

- A familiarity with the essential knowledge, principles and methods proper to the various subject areas or disciplines represented in the general education curriculum.

- The ability to relate the different subject areas or disciplines represented in the general education curriculum.

- A thorough grasp of the basic knowledge, principles or methods proper to one or more of the major disciplines or their equivalent

- The ability to relate and integrate the knowledge, principles and methods of study and analysis acquired in the student's major field with the knowledge gained in the general education curriculum.

- A broad understanding of the political and historical foundations of American government and society, together with a habit of bringing relevant knowledge of past thought and events, to bear on contemporary questions.

- A thoughtful grasp of the principles and history of liberal and democratic institutions and government generally, as well as of their practical workings, along with a proven ability to take up the responsibilities and privileges of liberal and democratic citizenship on campus in one's immediate community or in larger circles of human society.

- An ability to discuss the salient works and issues of Western history, together with a habit of bringing relevant knowledge of past thought and events to bear on contemporary questions. The ability to communicate effectively in an appropriate foreign or non-native language is a natural gateway to such studies.

- An appreciation for the salient features of the political and cultural history of at least one non-Western (or in the case of students of non-Western origin, at least one non-native) culture, along with the ability to relate that history to the student's native culture in intellectually cogent and significant ways. The ability to communicate effectively in an appropriate foreign or non-native language is an ideal complement to such cross-cultural or comparative learning.

- A substantial acquaintance with the various areas and salient issues of scientific and technological knowledge and research, along with a basic understanding of the ethical, philosophical and cultural implications of scientific and technological research and development. This study should include a substantial experience with laboratory principles and methods.

The Inclination to Inquire

An education in the liberal arts and sciences is more than the mere accumulation of knowledge and skills. It fosters students' desire for seeking out and acquiring important knowledge and skills, both for their own sake and for the good they contribute to our and individual lives. For this reason, a disposition for asking incisive and insightful questions and for pursuing enriching and useful knowledge is perhaps the surest sign of a liberally educated mind.

Aspects of success in fostering the inclination to inquire that institutions should seek to document and describe might include:

- The development of a reflective and inquisitive turn of mind, one that actively weighs the judgments and information put to it by authorities, by peer groups, by conventional wisdom or by the habit of its own convictions.

- The ability to question and assess one's own knowledge, abilities and performance accurately and without self-deception, along with the willingness and initiative to seek out and acquire relevant knowledge and training in areas of weakness.

- The ability to bring to bear the knowledge and skills acquired in academic pursuits to important issues, questions and endeavors outside the academy, and the disposition to seek out new knowledge and skills in and beyond the classroom.

- The development of a personally significant and continually examined perspective on historically and philosophically important answers to the question, "What is the good life?"

- The development of a personally significant and continually examined perspective on historically and philosophically important answers to questions, "What is the common good?" and "What is the best social

order?"

AALE developed these goals of liberal education under a grant from The Pew Charitable Trust for accrediting liberal arts institutions and programs on the basis on student learning. *Handbook for Accreditation*, American Academy for Liberal Education, Washington, D.C.

Jacques Barzun

Even if, nowadays, students attend college who are older than was once the norm, **the goals of college education remain the same**. The arts are fit for all minds, endowing them with particular and general abilities:

- to think
- to speak simply and clearly
- to express views rationally
- to own and use a body of facts and ideas that are widely known
- to detect errors and fallacies, resolve intellectual problems
- to possibly make discoveries in some branch of learning

To this armament of powers, the last five centuries have supplied new areas to exploit: history and the social sciences and the hugely expanded substance of the physical and life sciences. Those have broadened the curriculum of the basic college, but they do not change its character and role. (*Emphasis added and the abilities rearranged as bullets.)*

What, then, are college youths to carry away from their studies as they are swallowed up by career, parental or civic obligations? Much will be buried, but the innumerable portions of purport, reasoning and significance will still be there for instant recognition and application to the uses of life. It is this "apperceptive mass" that makes college graduates educated instead of ignorant.

Jacques Barzun, "Trim the College?—A Utopia!" POINT OF VIEW, *Chronicle of Higher Education*, June 22, 2001. Jacques Barzun is University Professor Emeritus and former Dean of the Faculties and Provost of Columbia University.

Winter, McClelland and Stewart

In *A New Case for the Liberal Arts*, Winter, McClelland, and Stewart provide a useful summary of undergraduate learning goals of eminent 20th Century educators.

1. Thinking critically or possessing broad analytical skill: *Hutchins, Harvard Committee, Dressel and Mayhew, and Barton.*

    a. Differentiation and discrimination within a broad range of particular phenomena (especially within the history of Western culture): *Plato, Harvard Committee, Dressel and Mayhew, Barton, and Bok.*

    b. Formation of abstract concepts: *Whitehead.*

    c. Integration of abstract concepts with particular phenomena or concrete instances; making relevant judgments: *Plato, Whitehead, Harvard Committee, Plato, Whitehead, Harvard Committee, and Dressel and Mayhew.*

    d. Evaluation of evidence and revision of abstract concepts and hypotheses as appropriate: *Dressel and Mayhew, and Bok.*

    e. Articulation and communication of abstract concepts: *Harvard Committee, Dressel and Mayhew, and Bok.*

    f. Differentiation and discrimination of abstractions, identification of abstract concepts: *Plato, Harvard Committee, Faust, Dressel and Mayhew, and Bok.*

    g. Comprehension of the logics governing the relationships among abstract concepts: *Plato, Whitehead, and Bok.*

2. Learning how to learn: *Bok.*

3. Thinking independently: *Faust, Barton, and Becker.*

4. Empathizing, recognizing one's own assumptions, and seeing all sides of an issue: *Dressel and Mayhew, Barton, and Bok.*

5. Exercising self-control for the sake of broader loyalties: *Plato, Rhodes, Wilkinson, and Becker.*

6. Showing self-assurance in leadership and leadership ability: *Plato, Rhodes, Wilkinson, and Becker.*

7. Demonstrating mature social and emotional judgment; personal integration: *Plato, Harvard Committee, Dressel and Mayhew, Perry, and Bok.*

8. Holding equalitarian, liberal, pro-science and antiauthoritarian values and beliefs: *Dressel and Mayhew, and Barton.*

9. Participating in and enjoying cultural experience: *Dressel and Mayhew, and Bok.*

Winter, David G., McClelland, David C., and Stewart, Abigail J. *A New Case for the Liberal Arts*, Washington: Jossey-Bass Publishers, 1982. (*The italized names are individuals or groups who support the particular goal.)*

Alverno's Abilities

Communication (reading, writing, speaking, listening, visual, quantitative, and technological literacy)

- Analysis
- Problem Solving
- Valuing in Decision-Making
- Social Interaction
- Global Perspectives
- Effective Citizenship
- Aesthetic Responsiveness(63)

Mentkowski, Marcia, and Associates. *Learning That Lasts*. San Francisco: Jossey-Bass, 2000.

Dean Rosovsky at Harvard. In a letter to the faculty in 1974, he set forth six attributes that the Harvard graduate should have when inducted at commencement into "the company of educated men and women":

1) An educated person must be able to think and write clearly and effectively, (2) An educated person should have a critical appreciation of the ways in which we gain knowledge and understanding of the Universe, of society, and of ourselves; (3) An educated American, in the last third of this century cannot be provincial in the sense of being ignorant of other cultures and other times; (4) An educated person is expected to have some understanding of, and experience in thinking about, moral and ethical problems; (5) We should expect an educated individual to have good manners and high aesthetic and moral standards; and (6) Finally, an educated individual should have achieved depth in some field of knowledge. Patterson (207)

A later committee led by James Q. Wilson submitted the "Report on the Core Curriculum" to the Harvard faculty which was approved by the faculty on 1979. It essentially repeated the Rosovsky attributes with the exception of "(5) We should expect an educated individual to have good manners and high aesthetic and moral standards." Patterson (208)

Palmer—Another View

The structure of reality is not exhausted by the principles of empiricism and rationality. Reality's ultimate structure is that of an organic, interrelated, mutually responsive community of being. Relationships—not facts and reasons—are the key to reality; as we enter those relationships, knowledge or reality is unlocked.... As our capacity for conscious and reflective relationship increases, so does our knowledge. The deepest calling in our quest for knowledge is not to observe and analyze and alter things. Instead, it is personal participation in the organic community of human and nonhuman being, participation in the network of caring and accountability called truth.

To know the truth is to enter with our whole persons into relations of mutuality with the entire creation—relations in which we not only know, but allow ourselves to be known.

Palmer, Parker J. *To Know As We Are Known*, New York: Harper & Row, Publishers, 1983, 53–54.

International Skill Comparisons

The Organization for Economic Cooperation and Development's (OECD's) PISA (Programme for International Student Assessment) compared 15-year-olds' reading, mathematical, and scientific literacies in the principal industrialized countries: Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Korea, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States.

Reading Literacy. Literacy in reading is measured on a five point scale. A 15-year-old student proficient at Level 5 is:

- capable of completing sophisticated reading tasks, such as:
- managing information that is difficult to find in unfamiliar texts;
- showing detailed understanding of such texts and inferring which information in the text is relevant to the task;
- evaluating critically and building hypotheses, drawing on specialized knowledge, and

accommodating concepts that may be contrary to expectations. 5

The U.S. is seventh out of 32 countries in the percentage of students reading at Level 5, but 15th in terms of mean reading scores – just above the OECD mean. 8

Mathematical Literacy. PISA assesses mathematical or quantitative literacy as competent to:

- recognize and interpret mathematical problems encountered in everyday life;
- translate these problems into a mathematical context;
- use mathematical knowledge and procedures to solve problems;
- interpret the results in terms of the original problem;
- reflect on the methods applied; and
- formulate and communicate the outcomes.

A difficult quantitative literacy task is described as follows:

> Students were presented with a diagram showing the pattern in which different trees would have to be planted in an orchard in order that conifers provide sufficient protection to apple trees. They had to work out which type of tree would increase faster
>
> in number as the orchard was enlarged and explain why. This required them to
>
> notice that the number of apple trees increased in proportion to the square of the number: of conifers. The task required students to think mathematically and recognize a general principle. 11

Against this standard, U.S. ranked 19th out of 32 countries below the OECD mean. 12

Scientific Literacy. Literacy in science was assessed by students' abilities to:

- use scientific knowledge;
- recognize scientific questions;
- identify what is involved in scientific investigations;
- relate scientific data to claims and conclusions; and to
- communicate these aspects of science.

A difficult task used in the test of scientific literacy was:

> Students were shown extracts from a 19th century scientist's diary, a table with his observations and a commentary, discussing the post-natal death from a particular fever of a large proportion of mothers in two wards of a hospital maternity clinic. Students had to indicate why the evidence did not support a contemporary belief that earthquakes caused the fever. This required them to explain the significance of different death rates in the two wards. 13

In scientific literacy, U.S. students' mean performance ranks U.S. 14th out of 32 countries, just below the OECD mean. 12

> Organization for Economic Co-Operation and Development. Programme for International Student Assessment. "Knowledge and Skills for Life, Executive Summary." First Results From PISA 2000.

Do graduates have the skills needed in the workplace?

These comparisons of graduates' perceptions of the skills they possessed at graduation with those skills actually needed in their work were based on data from a 1999 European survey of 1995 graduates, with four years of work experience. At least 3000 graduates were surveyed from each of 11 European countries and Japan. While the survey included 36 different skills, competencies, and areas, Blasko reports on only six. The table below compares the graduates' mean ratings of their skills at graduation and their perception of the importance of those skills after four years of work experience. (The scale ranged from 1 – "not at all" to 5 – "to great extent.")

Skills	Mean Rating of Possessed Skills at Graduation	Mean Rating of Work-Required Skills
Communication	3.8	4.2
Computer skills	3.0	3.8
Working in teams	3.7	4.3
Improving own performance	3.9	4.0
Problem solving	3.7	4.3
Numerical abilities	3.5	3.6

4

"... computing appears as the skill area where large gaps are apparent in almost every country studied and the ability to work in a team everywhere but the Scandinavian countries." 6

Blasko, Zsuzsa. "Key Skills: The Graduate Perspective." *Higher Education Digest* 42 (Spring 2002): Eight page insert between 14 and15.

Cultural Frames of Reference for Education

Feldman provides an interesting matrix for cross-cultural comparisons of the educated person.

Culture	Primary Focus	Advocates/Descriptors
Western-American	Intelligence	Hutchins: intellectual virtues Bloom: cognitive domain Goss: Intellectual discrimination
Classical India	Mental steadiness	Bhagavad-Gita: "Stabilized mentality" is achieved by eliminating the interest in physical objects that drives egotism, self-interest, and resulting passions.
Old China	Development of moral order	Confucius: Develop individuals "dedicated to knowledge, self-critical yet self-respecting, in whom a sense of duty was inculcated, for whom good conduct toward others was habitual, who appreciated poetry, ritual, and music, and who served as a good example – or role model – for others."
People's Republic of China	Service to others and the state; integration of theoretical and practical;	Mao: "A Communist should be frank, faithful and active, looking upon the interests of the revolution as his very life and subordinating his personal interests to those of the revolution ...

	identification with workers	he should be more concerned about the Party and the masses than about the individual, and concerned about others than about himself."
New Human Being	Fully integrated person	Gandhi: Education is "... an all-round drawing out of the best in child and man – body, mind, and spirit." Jiddu Krishnamurti: "When we talk about the total human being, we mean not only a human being with inward understanding, with a capacity to explore, to examine his inward being, his inward state and he capacity of going beyond it, but also someone who is good in what he does outwardly."

Feldman, Reynold. "The Educated Person in Cross-Cultural Perspective: Implications for the Postsecondary Educational Planner." *Planning for Higher Education* 8.1 (1979) 10-19.

Three Primary Educational Agendas

Egan provides a helpful classification of educational aims – socialization, truth about reality, and nature's guidance. He believes that education in North America is expected to somehow do all three when they are fundamentally incompatible. I will use his three-fold classification for sorting higher educational aims or outcomes and will briefly review his assessment of their incompatibilities. I created the following table from his very readable exposition of his three basic ideas of education.

THREE PRIMARY EDUCATIONAL AIMS

Descriptors	**Socialization**	**Seeing Reality**	**Maturation**
Historic Advocates	Oral Cultures	Plato	Rousseau
Historic Technique	Story	Dialogue	Nurture
Basic Aim	"inculcate a	Acquire modes of	Natural

	restricted set of norms and beliefs"	thinking that provide "a privileged, rational view of reality." (See # 1 below the table.)	maturation
Current Application	• Educate for job-related, economic-contributory knowledge & skills • Educate for useful knowledge for effective consumer & health behavior	Engage students in the great human conversation that transcends any one culture; i.e. Sagan's galactic or Oakeshott's historic-cultural conversation ..."	Optimize the development of each student through active, discovery learning that leads to learning how to learn and to think critically. Combines Dewey's progressivism and Piaget's psychological development
School's Role	Society's perpetuating agency	Engage students in the traditional, "hard disciplines"	Engage students in discovery and shape practice by empirical research
Teacher's Role	Model of prevailing values	Expert in subject matter	Facilitator optimal development

1. "Only by disciplined study of increasingly abstract forms of knowledge, guided by a kind of spiritual commitment, could the mind transcend the conventional beliefs, prejudices, and stereotypes of the time and come to see reality clearly." (13)

Egan, Kieran. *The Educated Mind: How Cognitive Tools Shape Our Understanding*. Chicago: The University of Chicago Press, 1997.

Trading Contemplation for Competence

Hesketh's observation that European "higher education is shifting from its role as provider of '**knowledge for contemplation**' to providing students with a set of key skills or competencies that belong to the ideology of 'operational competence' " applies to much, if not most, of American undergraduate education. Furthermore, it

comes at a considerable price. To further clarify this shift or trade off and to view its cost, the observations of several significant observers follow.

To be educated one must know something.

For Derr, the educated person knows the academic disciplines and subject. Making sound judgments, able to reason, esteemed by others as wise does not make an educated person if the individual has not learned mathematics, history, literature, and the usual academic subjects. Nor do moral characteristics make one educated. Derr defines the *educated person as one who has developed "awareness, understanding, recall, proficiency, belief, and habit in regard to the use of facts, concepts, and principles in mathematics, the sciences, and the humanities to understand and cope with experience*." (Emphasis added.) 302-307

> Derr, Richard L. "Education Versus Developing Educated Persons." *Curriculum Inquiry* 14:3 (1984) 301-309.

Maritain also sees grasping subject matter as crucial.

> "The intellectual virtues acquired by one student are not those acquired by another, be it a question of techniques, useful arts, and applied sciences, or of practical sciences dealing with human life or of speculative sciences. The knowledge which has to develop during university years is knowledge in a state of a *perfected and rational grasping* of a particular subject matter."
>
> Maritain, Jacques. *Education At The Crossroads*. New Haven: Yale University Press, 1998, 79.

Oakeshott represents a genre of academics which seriously question the university's ability to produce in students the general intellectual characteristics, such as critical thinking or inclination to inquire. While these traits may very well be important outcomes, they are acquired only through deep study of main academic disciplines, e. g. humanities, sciences, and social sciences. Learning to think of oneself or to think logically and developing character traits such as patience, accuracy, or determination are traits we may hope students will acquire. Nevertheless, "they, nor self-understanding itself, can be made the subject of learning." He adds --

> A culture is not a set of abstract aptitudes; it is composed of substantive expressions of thought, emotion, belief, opinion, approval and disapproval, of moral and intellectual discriminations, of enquiries and investigations, and learning is coming to understand and respond to these substantive expressions of thought as invitations to think and to believe. 32
>
> Fuller, Timothy, Ed. *The Voice of Liberal Learning: Michael Oakeshott on Education*. New Haven: Yale University Press, 1989.

To be educated is more than instrumental skills.

Nietzsche saw personal tragedy awaiting the high-minded student who only

received a utilitarian education.

> We find our academical "independents" growing up with philosophy and without art; and how can they then have any need to "go in for" the Greeks and Romans? – for we need now no longer pretend, like our forefathers, to have any great regard for the Greece and Rome, which, besides, sit enthroned in almost inaccessible loneliness and majestic alienation. The universities of the present time consequently give no heed to almost extinct predilections like these ... 130-131

> Take away the Greeks, together with philosophy and art, and what ladder have you still remaining by which to ascend to culture. For, if you attempt to clamber up the ladder without these helps, you must permit me to inform you that all your learning will lie like a heavy burden on your shoulders rather than furnishing you with wings and bearing you aloft. 131

> Not one of these noble, well-qualified youths has remained a stranger to that restless, tiring, perplexing, and debilitating need of culture : during his university term, when he is apparently the only free man in the crowd of servants and officials, he atones for this huge illusion of freedom by ever-growing inner doubts and convictions. He feels that he can neither lead nor help himself; and then he plunges hopelessly into the workaday world and endeavours to ward off such feelings by study. The most trivial bustle fastens itself upon him; he sinks under his heavy burden. Then he sinks under his heavy burden. Then he suddenly pulls himself together; he still feels some of that power within him which would have enabled him to keep his hear above water. Pride and noble resolutions assert themselves and grow in him. He is afraid of sinking at this early stage into the limits of a narrow profession; and now he grasps at pillars and railings alongside the stream that he may not be swept away by the current. In vain! for these supports give way, and he finds he has clutched at broken eds. In low and despondent spirits he sees his plans vanish away in smoke. His condition is undignified, even dreadful: he keeps between two extremes of work at high pressure and state of melancholy enervation. Then he becomes tired, lazy, afraid of work, fearful of everything great; and hating himself. He looks into his own breast, analyses his faculties, and finds he is only peering into hollow and chaotic vacuity. And then he once more falls from the heights of his eagerly-desired self-knowledge into ironical scepticism. He divests his struggles of their real importance, and feels himself ready to undertake any class of useful work, however degrading. He now seeks consolation in hasty and incessant action so as to hide himself from himself. And thus his helplessness and the want of a leader towards culture drive him from one form of life into another: but doubt, elevation, worry, hope, despair -- everything flings him hither and thither as a proof that all the stars above him by which he could have guided his ship have set. 132-133

> For these latter show by their base smugness and their narrow professional limitations that this is the right element for them: against which there is nothing to be said. Their comfort, however, does not counterbalance the suffering of one single young man as an inclination for culture and feels the need of a guiding hand, and who at last, in a moment discontent, throws down the reins and begins to despise himself. This is the guiltless; innocent; for who has saddled him with the unbearable burden of standing alone? Who has urged him on to independence at an age when one of the most natural and peremptory needs of youth is, so to speak, a self-surrendering to great leaders and an enthusiastic following in the footsteps of the masters. 133-134

> "A degenerate man of culture! Born for culture and brought up to non-culture! Helpless barbarian, slave of the day, chained to the present moment, and thirsting for something --ever thirsting! 135

Nietzsche, Friedrick. *On the Future of Our Educational Institutions*. Vol. Six in *The Complete Works of Friedrick Nietzsche*. Oscar Levy, Editor. Edinburgh: T.N. Foulis, 1909.

Jacques Ellul one of the three symbols, the other two being Malraux and Sarte, of post-WWII French intellectual life saw utilitarianism coming *even* to French higher education.

> "Education, even in France, is becoming oriented toward the specialized end of producing technicians; and, as a consequence, toward the creation of individuals useful only as members of a technical group, on the basis of the current criteria of utility-individuals who conform to the structure and the needs of the technical group. The intelligentsia will no longer be a model a conscience or an animating intellectual spirit for the group, even in the sense of performing a critical function. They will be the servants, the most conformist imaginable, of the instruments of technique. As Louis Couffignal puts it the human brain must be made to conform to the much more advanced brain of the machine. And education will no longer be an unpredictable and exciting adventure in human enlightenment, but an exercise in conformity and an apprenticeship to whatever gadgetry is useful in a technical world." 349

Ellul, Jacques. *The Technological Society*. Toronto: Alfred A. Knoft, 1964.

What drove this shift to instrumental competence as the primary outcome of education?

MacIntyre sees the shift symbolized by the change in focus of the Ninth and Eleventh editions of Encyclopedia Britannica. MacIntyre delineates two purposes of Diderot's and d'Alembert's *Encyclopedie* and the Ninth edition of the *Encyclopedia Britannica*. They served as reference works for a reading public, but they also were "the bearers of unified secular vision of the world and of the place of knowledge and of enquiry within it." Their target audience "was a public not merely literate and given to reading, but held to be educable in accordance with enlightened principles." In contrast, the Eleventh edition was only a reference document.

MacIntyre cites three reasons for the differences between the Ninth and Eleventh editions:

1. Enquiry became the task of independent, specialized professionals no longer bound together by the medieval and metaphors of "tree of knowledge or house of knowledge." Hence encyclopedias were collections of facts practically organized for the reader's convenience.
2. An "educated public" disappeared. MacIntyre defines "educated public" as "a group which not only shares fundamental assumptions on the basis of which it is able to articulate disagreements and organize debates, which reads to a significant degree the same texts, draws upon the same figures of speech, and shares standards of victory and defeat in intellectual debate, but which does so in and through institutionalized means, clubs and societies,

periodicals and more formal educational institutions." 216-217

3. An "educated public" cannot be sustained when"moral and theological truth ceased to be recognized as objects of substantive enquiry" and are "relegated to the realm of private belief." 217

"So the Ninth Edition is indeed a monument to a vanished and vanquished culture." 217 Without the influence and support of an "educated public," universities are left to providing what the customers will pay for. And they, students, parents, corporations and governments are more interested in skills for economic advancement. MacIntyre asserts that "moral philosophy" was the "keystone" of the 17th and 18th centuries' "preliberal" universities. With moral philosophy's dethronement, similar to theology's earlier dethronement "deprived the curriculum of any pragmatic principles of ordering." Without the integrating focus of moral philosophy, the liberal university has made "unconstrained and limitless absences of agreement" it normative behavior. Any attempt to restore a level of functional agreement by adopting some version of the Great Books curriculum is bound to fail for the same reasons that the preliberal university disappeared.

> "The preliberal modern university was a university of enforced and constrained agreements. The liberal university aspired to be a university of unconstrained agreements and hence its abolition of religious and moral tests and exclusions, and hence ... its present endangered state. Such reformers as those who propose some version of a Great Books curriculum ignore the fundamental character of our present disagreements and conflicts, presupposing possibilities of agreement of a kind which do not at present exist. 230

With what would MacIntyre replace the liberal university which functions as "an arena of neutral objectivity?" MacIntyre's post-liberal university would be "a place of constrained disagreement, of imposed participation in conflict, in which a central responsibility of higher education would be to initiate students into conflict." 230-231

> In such a university those engaged in teaching and enquiry would each have to play a double role. For, on the one hand, each of us would be participating in conflict as the protagonist of a particular point of view engaged thereby in two distinct but related tasks. The first of these would be to advance enquiry from within that particular point of view, preserving and translating the initial agreements with those who share that point of view and so articulating through moral and theological enquiry a framework within which other rival standpoints, doing so *both* in order to exhibit what is mistaken in that rival standpoint n the light of the understanding afforded by one's own point of view *and* in order to test the and retest the central theses advanced from one's own point of view against the strongest possible objections to them to be derived from one's opponents. So systematically conducted controversy would itself contribute to systematically moral and theological enquiry, and both would inform that teaching in which students were initiated into both enquiry and controversy. 231
>
> On the other hand, each of us would also have to play a second role, that not of a partisan, but of someone concerned to uphold and to order the ongoing conflicts, to provide and sustain institutionalized means for their expression, to negotiate the modes of encounter between opponents, to ensure that rival voices were not illegitimately suppressed, to sustain the university -- not as an arena of neutral objectivity but as in the liberal university, since each of the contending standpoints

would be advancing its own partisan account of the nature and function of objectivity -- but as an arena of- conflict in which the most fundamental type of moral and theological disagreement was accorded recognition. 231

MacIntyre, Alasdair. "Reconceiving the University as an Institution and the Lecture as a Genre," in *Three Rival Versions of Moral Enquiry Encyclopaedia, Genealogy, and Tradition (being Gifford Lectures delivered in the University of Edinburgh in 1998)*. Notre Dame: University of Notre Dame Press, 1990.

Spencer's shift.

The turn toward practical, instrumental outcomes of higher education is to some extent coincident with demise of religion's public influence. For example, Herbert Spencer an early adopter of Darwinism advocated making science and its methods the integrating paradigm of education. In *Education: Intellectual, Moral and Physical,* Spencer chided the English of his day for their preoccupation with the Greek-Latin Classical. He criticized it as more ornamental than functional. Education like clothing is shaped more by vanity than actual usefulness

> We are none of us content with quietly unfolding our own individualities to the full in all directions; but have a restless craving to impress our individualities upon others, and in some way subordinate them. And this it is which determines the character of our education. Not what knowledge is of most real worth, is the consideration; but what will bring most applause, honor, respect – what will conduce to social position and influence – what will be most imposing. 10-11

As evidence of his point, he cites the absence of rational, methodical discussion of the "comparative worths of different kinds of knowledge." While people pursue various kinds of knowledge, they never stop to consider "the enormous importance of determining in some rational way what things are really most worth learning." 13 Life is too short and education requires too much precious time to just plunge into whatever is education is fashionable. To make this point, Spencer cites the following song of his day:

> Could a man be secure
>
> That his days would endure
>
> As of old for a thousand long years,
>
> What things he might know:
>
> What deeds might he do!
>
> And all without hurry or care. 14

What learning then does Spencer believe is most important? It is learning how to use all of one's abilities for one's own and others' "greatest advantage," that is

"how to live most completely." And this decision cannot be left to speculation and reflection; it must be decided on empirical, scientific grounds.

> It **must not suffice simply to *think*** that such or such information will be useful in after life, or that this kind of knowledge is of more practical value than that; but we **must seek out some process of estimating their respective values**, so that as far as possible we may **positively *know*** which are the most deserving of attention. (Emphasis added) 17

While Spencer sails under the flag of objective empiricism, he begins his analysis with the following *a priori* classification of "the leading kinds of activity which constitute human life." Consistent with Darwin's "survival of the fittest" and with intimations of Maslow, he asserts the **natural** ranked order of life activities as those which --

1. "directly minister to self preservation;
2. "by securing the necessaries of life, indirectly minister to self-preservation;
3. "have for their end the rearing and discipline of offspring;
4. "are involved in the maintenance of proper, social and political relations;
5. "make up the leisure part of life, devoted to the gratification of the tastes and feelings." 18

Knowledge for self-preservation is paramount. 18-19 The hope of human kind lies in marrying genius and science. 75 Here is modernity's operant faith.

- "... the discipline of science is superior to that of our ordinary education, because of the *religious* culture that it gives.
- "Devotion to science is a tacit worship – a tacit recognition of worth in the things studied; and by implication in their Cause." 87
- "Whether for intellectual, moral, or religious training, the study of surrounding phenomena is immensely superior to the study of grammars and lexicons." 89
- "... Science is the household drudge, who, in obscurity, hides unrecognized perfections. To her has been committed all the work; by her skill, intelligence and devotion, have all the conveniences and gratifications been obtained been obtained; and while ceaselessly occupied ministering to the rest, she has been kept in the background, that her haughty sisters might flaunt their fripperies in the eyes of the world. ... For we are coming to the denouement, when the positions will be changed; and while these naughty sisters sink into merited neglect, Science, proclaimed as highest alike in worth and beauty, will reign supreme. 92-93

Spencer, Herbert. *Education: Intellectual, Moral and Physical*. New York: A.L. Burt Company, Publishers, 1883.

<u>What has been left behind?</u>

Answer: Liberal education for the free "man's" contemplation. Patterson summarizes Aristotle's understanding of liberal education to mean "... studies valuable for free persons who sought edification, intellectual and aesthetic pleasure, and a foundation for acquiring further knowledge." (194)

In contrast, instrumental education for expertise was not liberal education. For the Greeks, training in *techne* was not suitable education for a free man; it would not be considered liberal. (193)

There are many definitions of liberal education, but whatever it is today is derived from the classical seven liberal arts known as the *trivium* and *quadrivium*. Sister Miriam Joseph outlines the seven liberal arts as follows:

The Trivium: **The three arts of language pertaining to the mind**

Logic art of thinking ("... prescribes how to combine concepts into judgments and judgments into syllogisms and chains of reasoning so as to achieve truth.")

Grammar art of inventing and combining symbols ("... prescribes how to combine words so as to form sentences correctly.")

Rhetoric art of communication ("... prescribes how to combine sentences into paragraphs and paragraphs into a whole composition having unity, coherence, and the desired emphasis, as well as clarity, force, and beauty." ..."Rhetoric is the master art of the trivium, for it presupposes and makes use of grammar and logic; it is the art of communicating through symbols ideas about reality.")

The Quadrivium: The four arts of quantity pertaining to matter

Discrete quantity or number

Arithmetic theory of number

Music application of the number theory

Continuous quantity

Geometry theory of space

Astronomy application of the theory of space

Figure 1-1 *The Seven Liberal Arts* p. 3. (The quotes within parentheses in the Trivium section appear on p. 9. Joseph, Sister Miriam. *The Trivium*. Philadelphia: Paul Dry Books, 2002.

Critical thinking, the holy grail of modern education.

Perkinson argues that education has moved from humanistic education for potential leaders in Greco-Roman culture but with the demise the Roman Empire leaders were defined by strength rather than insight in the "Dark Ages." But the Protestant Reformation and the Catholic Counter Reformation reinstated humanistic learning for the elite. The Enlightenment of the 1700s made the scientific method the way of knowing. By the mid 1800s, classical-humanistic education was displaced by scientific knowledge in the education of leaders.

> For throughout the Western world, people had now begun to view the ideal educated person as an **expert**, as one who had certain, or scientific, knowledge about the nature of some specific things: a **specialist**. 18 (Emphasis added.)

Perkinson believes "...Romanticism introduced quite a different conception of the function of the humanities: as **arts** that nourished humane or humane sentiments and emotions." 19 (Emphasis added.) This re-understanding of humanities allowed the humanities reentry in the education of leaders. **Science** provided the **knowledge** for good decisions "...while an education in the **humanities**, especially in modern literature and history, developed the proper **sentiments** so that future leaders would apply their scientific knowledge in humane and sensitive ways." 19 (Emphasis added.)

Democratization led to the idea that everyone should be trained as leaders, decision makers. Perkinson points out that since the sixteenth century schools for the common folk were designed to make them obedient. So the "real" schools prepared leaders, and the schools for the common fold socialized them to go along. While this dual school system never developed deep American roots, Perkinson then argues –

> Not surprisingly, the proposals put forward by Dewey and others to use the common or public schools to prepare *all* people to be decision-makers never got off the ground. American did not have a participant democracy, and all attempts to use the schools to create one irrelevant since the schools, as everyone knew, were supposed to socialize the young to existing arrangements. The schools continued to socialize, turning out not leaders, but functionaries. 19

Perkinson believes the latter half of the twentieth century proved that the best of education will not assure good leaders.

> ... that traditional ideal of the educated person as a leader, a decision-maker, has saved to legitimize elitism and authoritarianism in Western civilization since the time of Plato and Isocrates. Throughout our history, educational theorists have claimed to possess the key to preparing future leaders to make the best decisions

> possible. But it is now clear that education can never fulfill this promise. No educational program can prepare people to make the best decisions possible: not the humanities, whether of the classical variety or the romantic; not philosophy; not the sciences. All leaders are fallible human beings. They will always make mistakes, no matter how -- or how long -- we educate them. They will continue to make decisions that bring about pain, discomfort, and adversity. 21

Seeing no hope in making good leaders through the study of philosophy, history, science, or literature, Perkinson believes "these studies ... make all people better able to become concerned critics of their leaders, better able to hold those leaders accountable for their decisions. But then, he concludes that *no content or curriculum guarantees the production of concerned critics*. Rather, he believes ***concerned critics more likely result from how they are taught***. (Emphases added.)

To summarize, Perkinson traces the turns of classical, humanistic learning or liberal education from Greco-Roman culture to American. For most of history, the elite have been liberally educated under the assumption that classical-humanistic and then a combination of classical-humanistic and scientific education would make them good leaders. He concludes that the results do not support these claims. Knowledge does not necessarily result in moral or ethical behavior. Nevertheless, he believes liberal education and the manner in which it is learned could produce concerned-critic citizens. On one hand, Perkinson appears to reject education as producing virtue in leaders but seems to believe it can produce virtue in citizens.

Perkinson's line of thought does help to explain the current, widespread faith in "critical thinking" as the almost universally affirmed purpose of undergraduate learning. Apparently, many have concluded with Perkinson that salvation lies not in virtue but in critical thinking, not in a change of heart but in an enlightened mind.

> Perkinson, Henry J. "The Educated Person: A Changing Ideal." *New York University Education Quarterly* 10.2 (Winter 1979): 17-21.

Educational Outcomes and Ultimate Values

There are no value-free educational outcomes. Rather all educational outcomes derive from the operant religion or ultimate values of institutions and their constituencies and cultures.

> Intellectuals have trouble describing the benefits of a liberal education because the liberal arts are a religion, the established religion of the ruling class. The exalted language, the universal setting, the ultimate value, the inability to define, the appeal to personal witness, the indirectness, the aphorisms – these are all the familiar modes of religious discourse. ... Faith in personal salvation by the liberal arts is professed in a creed intoned on ceremonial occasions such as commencements. It is blasphemy to take the promises literally, and if you don't understand what the words mean, you are

only admitting your lack of grace. (Bird 109)

Bird, Caroline. *The Case Against College*. New York: David McKay Company, Inc., 1975.

Reflections

Readers are left to their conclusions about the quotes about undergraduate literacies. But the following summary observations seem appropriate:

Governmental and Corporate Expectations. Governmental and corporate bodies emphasize instrumental literacies for employability, or competence over contemplation. Communication, quantitative, problem-solving, and team-work appear to be the most commonly sought competencies.

Academic Expectations. The academy shares a few learning outcomes with the corporate and governmental institution, particularly communication and mathematic competencies. Unlike the corporate and governmental statements, academic expectancies include literary, historical, philosophical, aesthetic, global, and sociological literacies, as well as critical thinking about history and culture and the ability to engage in abstract thought.

Common Competencies. The most widely advocated literacies are competencies derived more from the *way* one learn than the content one studies. That is, effective communication, quantitative literacy, problem solving, and information literacy are more pedagogically than content dependent.

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